

Aerospace Study Commonwealth of Virginia

Conducted by the
Virginia Academy of Science, Engineering, and Medicine
for the
Joint Committee on Technology and Science

December 12, 2016

Summary

- Aerospace represents a significant opportunity for economic growth and prestige for the Commonwealth.
- Current economic development practices are not competitive with the best practices of successful states.
- The study committee has identified corrective actions that will maximize the probability of success.
- Timely implementation of the recommendations is required to avoid missing the current window of opportunity.

Overview

- Statement of Task
- Aerospace Study Committee
- Schedule
- Methodology
- Interviews and Presentations
- Other States' Best Practices
- Case Studies
- Findings and Recommendations
- Summary

Statement of Task

- Assess current Virginia capabilities
- Identify opportunities to maintain and improve current assets
- Identify best practices used by other states to grow aerospace enterprise
- Identify federal opportunities and strategies to maximize success
- Identify non-federal opportunities and strategies to maximize success



Study Committee

Chair: Tom Young

Vice Chair: Jim Aylor

Directors: Drew Densmmore, VASEM
Lisa Wallmeyer, JCOTS

Members: Dave Bowles	John Langford
Terry Clower	Les Lyles
John Cosgrove	Billie Reed
Antonio Elias	Kathy Thornton
Don Kerr	Bill Wrobel
Scott Kordella	

Schedule

- July 18-19 First meeting, McLean, VA
- August 8-9 Second meeting, Hampton, VA
- October 10-11 Third meeting, Richmond, VA
- November 14-15 Fourth meeting, Charlottesville, VA
- December 12 JCOTS briefing
- January 6 Executive Summary to JCOTS
- January 20 Final Report to JCOTS

**Multiple meetings of the Executive Team between Study Committee meetings*

Methodology

- Multiple interviews and expert presentations
- Assessment of other states' best practices
- Case studies
- Study committee experience and caucus

Interviews/Presentations

Peter Bale, Chairman, Wallops Island Regional Alliance

Mark Blanks, Director, Mid-Atlantic Aviation Partnership

Philip Duke, Managing Director, Aero and Defense Risk Advis. Prac., KPMG

William Fredericks, CEO and Founder, Advanced Aircraft Company

Jon Greene, Associate Director, Mid-Atlantic Aviation Partnership

David Hinton, Senior Advisor for UMS, Office of the Secretary of Technology

Jack Kennedy, Board of Directors, VCSFA

Brian Kroll, Senior Economist, Virginia Economic Development Partnership

Aubrey Layne, Secretary, Virginia Department of Transportation



Interviews/Presentations (cont.)

Frank McKenna, Member of Advisory Board, OmniEarth

Theresa Mayer, Vice President for Research and Innovation, Virginia Tech

Steven B. Miner, Administrator, Accomack County

Daniel Morris, Director, Peninsula Technology Incubator

Dale Nash, Executive Director, Virginia Commercial Space Flight Authority

Craig Quigley, Executive Director, Hampton Roads MFFA

Douglas Stanley, President and Executive Director, NIA

John Tylko, Chief Information Officer, Aurora Flight Sciences

Assessment of Best Practices

- Surveyed all relevant states
- Identified best-in-class states
 - Alabama Nebraska Texas
 - California New York
 - Colorado North Carolina
 - Florida North Dakota
 - Georgia South Carolina
- Selected two states that represented best practices in commercial space and UAS
 - Florida (space)
 - North Dakota (UAS)

Case Studies

- Advanced Aircraft Company
- Aerojet Rocketdyne
- Blue Origins
- OmniEarth
- Orbital ATK
- Rolls-Royce

Findings and Recommendations

Areas of Interest

- Identification of maximum opportunities for growth
- Virginia commercial space and UAS assets
- Virginia performance in economic development
- Commercial space: Florida's best practices
- UAS: North Dakota's best practices
- Lessons learned
- Federal opportunities

Maximum Opportunities for Growth

- Commercial space
- Unmanned aerial systems (UAS)
- Rapid expansion of commercial space and UAS opportunities requires timely action

Virginia Assets

Virginia is the home of an impressive group of government facilities, commercial enterprises, and academic institutions that support aerospace research and development

- Examples of Government facilities
 - NASA Langley Research Center
 - NASA Wallops Flight Facility
 - National Reconnaissance Office
 - National Geospatial-Intelligence Agency
 - Fort Pickett - Blackstone

Virginia Assets (cont.)

- Examples of commercial enterprises
 - Orbital ATK
 - Aurora Flight Systems
 - Northrop Grumman
 - Rolls-Royce
 - Aerojet Rocketdyne
- Examples of Universities/Research facilities
 - National Institute for Aerospace
 - Commonwealth Center for Advanced Manufacturing
 - UVA – Aerospace Research Laboratory
 - Virginia Tech – Mid-Atlantic Aviation Partnership/VTTI
 - Old Dominion University – Virginia Modeling, Analysis, and Simulation Center

Virginia Assets - Wallops

The Wallops complex represents an example of a significant opportunity for economic growth and recognition as a space and UAS state

Wallops complex:

- NASA
- NOAA
- Navy
- Orbital ATK
- Virginia Commercial Space Flight Authority/Mid-Atlantic Regional Spaceport
- Marine Science Consortium
- Wallops Research Park
- Numerous contractors

Virginia Performance in Economic Development

- Commercial space and UAS economic development performance has been mixed over the past decade
 - Northrop Grumman established headquarters in the Commonwealth
 - Rolls-Royce built a new advanced manufacturing facility in the Commonwealth
 - Orbital ATK signed an agreement in 2008 for launch activities at Wallops
 - Textron Systems expands UAS training and services operations in Blackstone, VA
- There has not been any significant commercial space commitment to Virginia since 2008.
- There has yet to be any significant UAS commitment to Virginia

Florida: Best Practices in Commercial Space

- Built out a complete commercial space infrastructure, taking advantage of NASA and military presence, a spaceport, talented workforce, an extensive corporate presence, and integrated university R&D
- Created a single dedicated aerospace economic development agency with power to negotiate on behalf of the state
- Provided this agency with financial tools and funding (Approximately \$40 million for economic development activities) needed to incentivize aerospace companies

North Dakota: Best Practices in Commercial UAS

- Built a UAS hub that includes an FAA test site, military UAS activity, a dedicated UAS business park, and a university system emphasizing UAS research and education
- Created a one-stop-shop that promotes and funds the UAS industry
- Provided approximately \$35 million over multiple years to incentivize UAS companies

Federal Opportunities

- Virginia is home to extraordinary federal facilities
- Budgets that support federal facilities in Virginia are most likely to be flat, at best
- Opportunities will still occur in the federal arena but will be challenging to identify without some special attention (example: Triton)

Lessons Learned

- There is no single authority in Virginia with negotiating power
- Virginia has significant government, commercial, and academic aerospace assets
- There is inadequate support of the current aerospace assets
- Virginia UAS enterprise is in the very early stage of development
- Start-ups would benefit from a suite of services that are supported by state
- Virginia's economic development efforts are poorly coordinated
- Virginia's aerospace assets are not well coordinated to support economic development
- Significant new Federal opportunities exist but require focused efforts to identify

Recommendations

- Establish *immediately* commercial space and UAS as areas of primary focus
- Create a senior space/UAS economic development leader position with access to the Governor and negotiating authority
- Support and strengthen the state's current aerospace assets
- Coordinate the state's existing aerospace assets to support effective economic development
- Establish pre-approved economic incentives (budget, tax incentives, etc.) to attract new companies to the Commonwealth
- Focus on identifying new federal opportunities within existing budget

Summary

- Aerospace represents a significant opportunity for economic growth and prestige for the Commonwealth
- Current economic development practices are not consistent with the “Best Practices” of the successful states
- The Study Committee has identified corrective actions that will create economic growth in the aerospace sector in Virginia
- Timely implementation of these actions is required to avoid the window of growth opportunity